MCP-1RA

GenCore version 5.1.4_p5_4578

OM protein - protein search, using sw model

Run on: May 19, 2003, 16:35:42 ; Search time 55.5395 Seconds
(without alignments)
897.302 Million cell updates/sec

Title: US-09-625-573-2
Perfect score: 1970
Sequence: 1 MLSTSRSRFIRNTNESGEEV.....GKGKSIGRAPEASLQDKEGA 374

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_101002:*
1: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
2: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
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22: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2001.DAT:*
23: /SIDS2/gcgdata/geneseq/geneseqp-embl/AA2002.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1970	100.0	374	16	AAR79165	Human monocyte che
2	1970	100.0	374	22	AAG80107	Human CCR2a protei
3	1727.5	87.7	329	22	AAB46859	Human MCP-1 recept
4	1651.5	83.8	360	16	AAR79166	Human monocyte che
5	1651.5	83.8	360	18	AAW35833	Human monocyte che
6	1651.5	83.8	360	22	AAG80108	Human CCR2b protei
7	1651.5	83.8	360	22	AAU07614	Human wild-type CC
8	1650.5	83.8	360	22	AAU07613	Human CCR2-64I pol
9	1645.5	83.5	360	22	ABB56340	Non-endogenous hum
10	1236	62.7	352	22	AAG79089	Amino acid sequenc
11	1234	62.6	354	19	AAW54037	Mouse CC-CKR5 prot
12	1224	62.1	352	18	AAW27407	Human CCR5. Homo
13	1224	62.1	352	18	AAW27123	Human chemokine re
14	1224	62.1	352	18	AAW27125	Macaque chemokine
15	1224	62.1	352	19	AAW23835	Human CC chemokine
16	1224	62.1	352	20	AAW88232	HIV-1 co-receptor
17	1224	62.1	352	22	AAG80111	Human CCR5 protein
18	1224	62.1	352	22	AAB82948	Human HIV-1 co-rec
19	1224	62.1	352	22	AAE07039	Human G-protein ch
20	1224	62.1	352	22	AAE07048	Human G-protein ch
21	1224	62.1	352	22	AAB83354	Human CCR5 protein
22	1224	62.1	352	22	AAE04321	Human chemokine re
23	1224	62.1	352	22	AAB46858	Human HDGNR10 prot
24	1224	62.1	352	23	AAU97152	Human G-protein ch
25	1224	62.1	352	23	ABB08343	Human chemokine (C
26	1224	62.1	352	23	AAM52828	Human CC chemokine
27	1224	62.1	439	20	AAY41280	Fusion protein con
28	1219.5	61.9	371	19	AAW23834	Human CC chemokine
29	1218	61.8	352	22	ABB56342	Non-endogenous hum
30	1218	61.8	352	23	AAM52829	Human CCR5 Gln 55
31	1215	61.7	352	18	AAW07602	Human G-protein ch
32	1215	61.7	352	21	AAY80128	Human G-protein ch
33	1215	61.7	352	22	AAE07037	Human G-protein ch
34	1215	61.7	352	22	AAE07046	Human G-protein ch
35	1215	61.7	352	23	AAU97150	Human G-protein ch
36	1195.5	60.7	332	18	AAW26766	Human chemokine re
37	967.5	49.1	355	15	AAR52749	C-C chemokine rece
38	967.5	49.1	355	18	AAW26588	Human MIP-1 alpha/
39	967.5	49.1	355	18	AAW25751	Human MIP-1alpha/R
40	967.5	49.1	355	21	AAB20571	Human CC-chemokine
41	920.5	46.7	355	18	AAW29179	Rat CC chemokine r
42	897.5	45.6	355	19	AAW51744	Human C-C chemokin
43	890.5	45.2	355	17	AAW03376	CC-chemokine recep
44	890.5	45.2	355	18	AAW10100	Human C-C chemokin
45	890.5	45.2	355	23	ABB07733	Human C-C chemokin

ALIGNMENTS

RESULT 1
AAR79165
ID AAR79165 standard; Protein; 374 AA.
XX
AC AAR79165;
XX
DT 29-DEC-1995 (first entry)
XX
DE Human monocyte chemoattractant protein-1 receptor MCP-1RA.
XX
KW Monocyte chemoattractant protein-1 receptor; MCR-1R; chemokine.
XX
OS Homo sapiens.
XX

FH	Key	Location/Qualifiers
FT	Domain	49..70
FT		/label= transmembrane
FT	Domain	80..700
FT		/label= transmembrane
FT	Domain	115..136
FT		/label= transmembrane
FT	Domain	154..178
FT		/label= transmembrane
FT	Domain	204..231
FT		/label= transmembrane
FT	Domain	244..268
FT		/label= transmembrane
FT	Domain	295..313
FT		/label= transmembrane
FT	Region	314..375
FT		/label= carboxyl tail
FT	Domain	1..48
FT		/label= extracellular

XX
PN WO9519436-A.
XX
PD 20-JUL-1995.
XX
PF 11-JAN-1995; 95WO-US00476.
XX
PR 13-JAN-1994; 94US-0182962.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Charo I, Coughlin S;
XX
DR WPI; 1995-263866/34.
DR N-PSDB; AAQ96297.
XX
PT DNA encoding monocyte chemo-attractant protein-1 receptor - used partic.
PT for identifying antagonists and for treating diseases characterised by
PT monocytic infiltrates
XX
Claim 2; Fig 1; 84pp; English.

CC To identify and clone new members of the chemokine receptor gene
CC family, degenerate oligo primers were designed corresp. to the
CC conserved sequences R79167 in the second and R79168 in the third
CC transmembrane domains of the MIP-1alpha/RANTES receptor, the IL-8
CC receptors and the HUMSTRS orphan receptor (GenBank Accession #M99293.
CC The degenerate oligo incorporating EcoRI and XhoI sites at their 5'
CC ends are Q96299 and Q96300. Amplification of cDNA derived from MM6
CC cells with the primers yieled a number of PCR products. One cDNA
CC appeared to encode a novel protein. To obtain a full-length version
CC of this clone, a MM6 cDNA library was constructed in pFROG and probed
CC with the PCR product. A 2.1 kb cDNA clone was obtd. Analysis of
CC additional clones in the MM6 cDNA library revealed a second
CC sequence that was identical to the 2.1 kb cDNA sequence first obtd.
CC from the 5' UTR through the putative seventh transmembrane domain
CC but contained a different cytoplasmic tail. The second sequence
CC appears to represent alternative splicing of the carboxyl-terminal
CC tail of the MCP-1R protein. The two sequences are denoted MCP-1RA
CC and MCP-1RB (see Q96297/R79165 & Q96298/R79166). Active mature
CC MCP-1RA has a predicted mol. wt. of about 42,000 daltons. MCP-1RB
CC has a mol. wt. of about 41,000 daltons.
XX
SQ Sequence 374 AA;

Query Match 100.0%; Score 1970; DB 16; Length 374;
Best Local Similarity 100.0%; Pred. No. 2.1e-216;
Matches 374; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
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Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
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Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy     301 NPIIYAFVGEKFRSLFHIALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSI 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 NPIIYAFVGEKFRSLFHIALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSI 360
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Qy 361 GRAPEASLQDKEGA 374
||||||||||||||
Db 361 GRAPEASLQDKEGA 374

RESULT 2
AAG80107
ID AAG80107 standard; Protein; 374 AA.
XX
AC AAG80107;
XX
DT 17-JAN-2002 (first entry)
XX
DE Human CCR2a protein.
XX
KW Chemokine; tumour diagnosis; colorectal; prostatic; organ rejection;
KW inflammation; autoimmune disease; metastasis; bronchial asthma; lupus;
KW chronic bowel inflammation; rheumatoid arthritis; cytostatic;
KW antiinflammatory; antiasthmatic; immunosuppressive; dermatological;
KW antirheumatic; antiarthritic.
XX
OS Homo sapiens.
XX
PN WO200172830-A2.
XX
PD 04-OCT-2001.
XX
PF 02-APR-2001; 2001WO-EP03708.
XX
PR 31-MAR-2000; 2000DE-1016013.
XX
PA (IPFP-) IPF PHARM GMBH.
PA (FORS/) FORSSMANN U.
XX
PI Forssmann W, Adermann K, Heitland A, Spodsberg N;
XX
DR WPI; 2001-626256/72.
XX
PT Diagnostic agent containing two or more receptor-specific ligands,
PT useful for detecting tumors, inflammation etc., also therapeutic use of
PT ligand inhibitors -
XX
PS Disclosure; Page 9; 26pp; German.
XX
CC This invention describes a novel diagnostic agent (A) comprising at least
CC two different ligands (I) for receptors (II) that are implicated in
CC disease. (A) are used for the diagnosis of tumors (especially colorectal
CC or prostatic), organ rejection, inflammation and autoimmune diseases.
CC Also inhibitors of (I) are used therapeutically against tumors (and their
CC metastases), inflammation (particularly bronchial asthma or chronic bowel
CC inflammation), or autoimmune diseases (rheumatoid arthritis or lupus),
CC where the (cardio)vascular, lymphatic, respiratory, nervous, digestive,
CC endocrine, motor or urogenital systems or skin are affected, and bone
CC marrow diseases. The products of the invention are chemokine derivatives
CC which have cytostatic, antiinflammatory, antiasthmatic,
CC immunosuppressive, dermatological, antirheumatic, antiarthritic.
CC Chemokines act on specific tumor and inflammatory cells through a
CC constellation of chemokine receptors (CR), which control migration and
CC proliferation of these cells. AAG80045-AAG80128 represent human chemokine
CC fragments used to illustrate the method of the invention.
XX
SQ Sequence 374 AA;

Query Match 100.0%; Score 1970; DB 22; Length 374;
Best Local Similarity 100.0%; Pred. No. 2.1e-216;
Matches 374; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db     61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy    121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy    181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy    301 NPIIYAFVGEKFRSLFHIALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSI 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 NPIIYAFVGEKFRSLFHIALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSI 360

Qy    361 GRAPEASLQDKEGA 374
          ||||||||||||||
Db    361 GRAPEASLQDKEGA 374
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RESULT 3
AAB46859
ID AAB46859 standard; Protein; 329 AA.
XX
AC AAB46859;
XX
DT 16-AUG-2001 (updated)
DT 02-AUG-2001 (updated)
DT 04-MAY-2001 (first entry)
XX
DE Human MCP-1 receptor protein fragment.
XX
KW HDGNR10; human; G-protein chemokine receptor; antiinflammatory;
KW immunomodulatory; anticoagulant; antiallergic; immunosuppressive;
KW cytostatic; antiparasitic; antipsoriatic; antirheumatic; antiarthritic;
KW vasotropic; gene therapy; haematopoiesis; wound healing; coagulation;
KW angiogenesis; solid tumour; infection; leukemia; growth factor activity;
KW T-cell mediated autoimmune disease; psoriasis; allergy; atherogenesis;
KW anaphylaxis; malignancy; inflammation; histamine; IgE; silicosis; shock;
KW immunoglobulin E-mediated allergic reaction; rheumatoid arthritis;
KW prostaglandin-independent fever; bone marrow failure; sarcoidosis;
KW hyper-eosinophilic syndrome; vulnerary.
XX
OS Homo sapiens.
XX
PN US2001000241-A1.
XX
PD 12-APR-2001.
XX
PF 29-NOV-2000; 2000US-0725285.
XX
PR 06-JUN-1995; 95US-0466343.
PR 18-NOV-1998; 98US-0195662.
PR 25-JUN-1999; 99US-0339912.
XX
PA (LIYY/) LI Y.
PA (RUBE/) RUBEN S M.
XX
PI Li Y, Ruben SM;
XX
DR WPI; 2001-226317/23.
XX
PT New human G-protein chemokine receptor polypeptides and
PT polynucleotides, useful for identifying (ant)agonists to the G-protein
PT chemokine receptor -
XX
PS Disclosure; Page 16-17; 22pp; English.
XX
CC This invention describes a novel receptor polypeptide (I) selected from
CC (i) a fully defined 329 amino acid sequence (II) fully disclosed in the
CC specification; and (ii) a polypeptide encoded by the cDNA contained in a
CC plasmid, and fragments, analogs and derivatives of the polypeptide. The
CC products of the invention have antiinflammatory, immunomodulatory,
CC anticoagulant, antiallergic, immunosuppressive, vulnerary, cytostatic,
CC antiparasitic, antipsoriatic, antirheumatic, antiarthritic and vasotropic
CC activity and can be used for gene therapy. The G-protein chemokine
CC receptors, HDGNR10, (I) are useful for screening for compounds which
CC activate or inhibit activation of (I). The products of the invention can
CC also be used for stimulating haematopoiesis, wound healing, coagulation,
CC angiogenesis, treating solid tumours, chronic infections, leukemia,
CC T-cell mediated autoimmune diseases, parasitic infections, psoriasis, and
CC stimulating growth factor activity. HDGNR10 is useful for treating
CC allergy, atherogenesis, anaphylaxis, malignancy, chronic and acute
CC inflammation, histamine and immunoglobulin E (IgE)-mediated allergic
CC reactions, prostaglandin-independent fever, bone marrow failure,
CC silicosis, sarcoidosis, rheumatoid arthritis, shock and
CC hyper-eosinophilic syndrome.
CC (N.B. This record was resubmitted to correct errors in the keyword
CC formatting).
XX
SQ Sequence 329 AA;

Query Match 87.7%; Score 1727.5; DB 22; Length 329;
Best Local Similarity 95.6%; Pred. No. 9.7e-189;
Matches 329; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

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Qy     18 EEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLT 77
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 EEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLT 60

Qy     78 DIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTID 137
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 DIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHI---------------- 105

Qy    138 RYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFPRG 197
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    106 RYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFPRG 165

Qy    198 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 257
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    166 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 225

Qy    258 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLFH 317
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    226 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLFH 285

Qy    318 IALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSIG 361
          |||||||||||||||||||||||||||||||||||||||||||||
Db    286 IALGCRIAPLQKPVCGGPGVRPGKNVKVTTQGLLDGRGKGKSIG 329
```

RESULT 4
AAR79166
ID AAR79166 standard; Protein; 360 AA.
XX
AC AAR79166;
XX
DT 29-DEC-1995 (first entry)
XX
DE Human monocyte chemoattractant protein-1 receptor MCP-1RB.
XX
KW Monocyte chemoattractant protein-1 receptor; MCR-1R; chemokine.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 49..70
FT /label= transmembrane
FT Domain 80..700
FT /label= transmembrane
FT Domain 115..136
FT /label= transmembrane
FT Domain 154..178

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FT                  /label= transmembrane
FT   Domain         204..231
FT                  /label= transmembrane
FT   Domain         244..268
FT                  /label= transmembrane
FT   Domain         295..313
FT                  /label= transmembrane
FT   Region         314..360
FT                  /label= carboxyl tail
FT   Domain         1..48
FT                  /label= extracellular
XX
PN   WO9519436-A.
XX
PD   20-JUL-1995.
XX
PF   11-JAN-1995;   95WO-US00476.
XX
PR   13-JAN-1994;   94US-0182962.
XX
PA   (REGC ) UNIV CALIFORNIA.
XX
PI   Charo I, Coughlin S;
XX
DR   WPI; 1995-263866/34.
DR   N-PSDB; AAQ96298.
XX
PT   DNA encoding monocyte chemo-attractant protein-1 receptor - used partic.
PT   for identifying antagonists and for treating diseases characterised by
PT   monocytic infiltrates
XX
PS   Claim 2; Fig 2; 84pp; English.
XX
CC   To identify and clone new members of the chemokine receptor gene
CC   family, degenerate oligo primers were designed corresp. to the
CC   conserved sequences R79167 in the second and R79168 in the third
CC   transmembrane domains of the MIP-1alpha/RANTES receptor, the IL-8
CC   receptors and the HUMSTRS orphan receptor (GenBank Accession #M99293.
CC    The degenerate oligo incorporating EcoRI and XhoI sites at their 5'
CC   ends are Q96299 and Q96300. Amplification of cDNA derived from MM6
CC   cells with the primers yieled a number of PCR products. One cDNA
CC   appeared to encode a novel protein. To obtain a full-length version
CC   of this clone, a MM6 cDNA library was constructed in pFROG and probed
CC   with the PCR product. A 2.1 kb cDNA clone was obtd. Analysis of
CC   additional clones in the MM6 cDNA library revealed a second
CC   sequence that was identical to the 2.1 kb cDNA sequence first obtd.
CC   from the 5' UTR through the putative seventh transmembrane domain
CC   but contained a different cytoplasmic tail. The second sequence
CC   appears to represent alternative splicing of the carboxyl-terminal
CC   tail of the MCP-1R protein. The two sequences are denoted MCP-1RA
CC   and MCP-1RB (see Q96297/R79165 & Q96298/R79166). Active mature
CC   MCP-1RA has a predicted mol. wt. of about 42,000 daltons. MCP-1RB
CC   has a mol. wt. of about 41,000 daltons.
XX
SQ   Sequence   360 AA;

  Query Match             83.8%;  Score 1651.5;  DB 16;  Length 360;
  Best Local Similarity   95.5%;  Pred. No. 5.4e-180;
  Matches  319;  Conservative    3;  Mismatches    5;  Indels    7;  Gaps    3;

Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
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Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy     301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
           ||||||||||||    |:|   ||    |:  |:
Db     301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334


RESULT 5
AAW35833
ID   AAW35833 standard; Protein; 360 AA.
XX
AC   AAW35833;
XX
DT   27-FEB-1998  (first entry)
XX
DE   Human monocyte chemoattractant protein 1 receptor.
XX
KW   Human; MCP-1; monocyte chemoattractant protein; receptor; tumour;
KW   inflammatory disease; viral; allergy; diabetes.
XX
OS   Homo sapiens.
XX
PN   JP09238688-A.
XX
PD   16-SEP-1997.
XX
PF   11-MAR-1996;   96JP-0053574.
XX
PR   11-MAR-1996;   96JP-0053574.
XX
PA   (TAKE ) TAKEDA CHEM IND LTD.
XX
DR   WPI; 1997-506557/47.
DR   N-PSDB; AAT96976.
XX
PT   DNA encoding human monocyte chemoattractant protein 1 receptor -
PT   used to treat tumours and inflammatory, viral, infectious, allergic,
PT   diabetic and central nervous system diseases
XX
PS   Disclosure; Page 12-14; 15pp; Japanese.
XX
CC   The present sequence represents human monocyte chemoattractant protein 1
CC   (MCP-1) receptor protein. The MCP-1 receptor protein and encoding DNA
CC   are used for the prevention and treatment of tumours and inflammatory,
CC   viral, infectious, allergic, diabetic and central nervous system
CC   diseases.
XX
SQ   Sequence   360 AA;

  Query Match             83.8%;  Score 1651.5;  DB 18;  Length 360;
  Best Local Similarity   95.5%;  Pred. No. 5.4e-180;
  Matches  319;  Conservative    3;  Mismatches    5;  Indels    7;  Gaps    3;

Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
```

```
Qy    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy    301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
          |||||||||||||   |:|   ||    |:  |:
Db    301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334
```

RESULT 6
AAG80108
ID AAG80108 standard; Protein; 360 AA.
XX
AC AAG80108;
XX
DT 17-JAN-2002 (first entry)
XX
DE Human CCR2b protein.
XX
KW Chemokine; tumour diagnosis; colorectal; prostatic; organ rejection;
KW inflammation; autoimmune disease; metastasis; bronchial asthma; lupus;
KW chronic bowel inflammation; rheumatoid arthritis; cytostatic;
KW antiinflammatory; antiasthmatic; immunosuppressive; dermatological;
KW antirheumatic; antiarthritic.
XX
OS Homo sapiens.
XX
PN WO200172830-A2.
XX
PD 04-OCT-2001.
XX
PF 02-APR-2001; 2001WO-EP03708.
XX
PR 31-MAR-2000; 2000DE-1016013.
XX
PA (IPFP-) IPF PHARM GMBH.
PA (FORS/) FORSSMANN U.
XX
PI Forssmann W, Adermann K, Heitland A, Spodsberg N;
XX
DR WPI; 2001-626256/72.
XX
PT Diagnostic agent containing two or more receptor-specific ligands,
PT useful for detecting tumors, inflammation etc., also therapeutic use of
PT ligand inhibitors -
XX
PS Disclosure; Page 9; 26pp; German.
XX
CC This invention describes a novel diagnostic agent (A) comprising at least
CC two different ligands (I) for receptors (II) that are implicated in
CC disease. (A) are used for the diagnosis of tumors (especially colorectal
CC or prostatic), organ rejection, inflammation and autoimmune diseases.
CC Also inhibitors of (I) are used therapeutically against tumors (and their
CC metastases), inflammation (particularly bronchial asthma or chronic bowel
CC inflammation), or autoimmune diseases (rheumatoid arthritis or lupus),
CC where the (cardio)vascular, lymphatic, respiratory, nervous, digestive,
CC endocrine, motor or urogenital systems or skin are affected, and bone
CC marrow diseases. The products of the invention are chemokine derivatives
CC which have cytostatic, antiinflammatory, antiasthmatic,
CC immunosuppressive, dermatological, antirheumatic, antiarthritic.
CC Chemokines act on specific tumor and inflammatory cells through a
CC constellation of chemokine receptors (CR), which control migration and
CC proliferation of these cells. AAG80045-AAG80128 represent human chemokine
CC fragments used to illustrate the method of the invention.
XX
SQ Sequence 360 AA;

Query Match 83.8%; Score 1651.5; DB 22; Length 360;
Best Local Similarity 95.5%; Pred. No. 5.4e-180;
Matches 319; Conservative 3; Mismatches 5; Indels 7; Gaps 3;

```
Qy      1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy     61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy    121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy    181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy    301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
          |||||||||||||   |:|   ||    |:  |:
Db    301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334
```

RESULT 7
AAU07614
ID AAU07614 standard; Protein; 360 AA.
XX
AC AAU07614;
XX
DT 04-DEC-2001 (first entry)
XX
DE Human wild-type CCR2-64V polypeptide.
XX
KW Human; CCR2 receptor; CCR2-64I; CCR2-64V; gene therapy; atherosclerosis;
KW single nucleotide polymorphism; hypercholesterolaemia.
XX
OS Homo sapiens.
XX
PN WO200162796-A1.
XX
PD 30-AUG-2001.
XX
PF 22-FEB-2001; 2001WO-GB00755.
XX
PR 22-FEB-2000; 2000GB-0004183.
XX
PA (SMIK) SMITHKLINE BEECHAM PLC.
XX
PI Valdes AM, Groot PHE, Spurr NK;
XX
DR WPI; 2001-550086/61.
DR N-PSDB; AAS12140.
XX
PT Diagnosing atherosclerosis or susceptibility to atherosclerosis in a
PT subject, by determining a single nucleotide polymorphism in specific
PT codon of a polynucleotide encoding human CCR2 receptor in genome of the
PT subject -
XX
PS Claim 1; Page 21; 28pp; English.
XX
CC The invention relates to diagnosing atherosclerosis (or susceptibility
CC to) in a subject by determining expression or activity of the human
CC CCR2-64I polypeptide (a polymorphic variant form of the human CCR2
CC receptor) or the CCR2-64V polypeptide (human CCR2 receptor), by screening
CC for a single nucleotide polymorphism in codon 64 of the polynucleotide
CC encoding the CCR2 receptor. This results in production of CCR2-64I,
CC whereby polymorphic variants are associated with a lower incidence of
CC atherosclerosis. The presence or amount of CCR2-64I/V in a sample can
CC also be analysed. The sequences of the invention can be used for
CC predicting the response of a patient to drug treatment, for predicting
CC the disease outcome in a patient and also for the production of a
CC treatment for hypercholesterolaemia. The sequence represents the

```
CC   wild-type receptor polypeptide CCR2-64V.
XX
SQ   Sequence   360 AA;

  Query Match             83.8%;  Score 1651.5;  DB 22;  Length 360;
  Best Local Similarity   95.5%;  Pred. No. 5.4e-180;
  Matches  319;  Conservative    3;  Mismatches    5;  Indels    7;  Gaps    3;

Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy     301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
           |||||||||||||   |:|   ||    |:  |:
Db     301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334


RESULT 8
AAU07613
ID   AAU07613 standard; Protein; 360 AA.
XX
AC   AAU07613;
XX
DT   04-DEC-2001  (first entry)
XX
DE   Human CCR2-64I polymorphic variant polypeptide.
XX
KW   Human; CCR2 receptor; CCR2-64I; CCR2-64V; gene therapy; atherosclerosis;
KW   single nucleotide polymorphism; hypercholesterolaemia.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 64
FT                   /note= "Wild-type Val is replaced by Ile"
XX
PN   WO200162796-A1.
XX
PD   30-AUG-2001.
XX
PF   22-FEB-2001; 2001WO-GB00755.
XX
PR   22-FEB-2000; 2000GB-0004183.
XX
PA   (SMIK ) SMITHKLINE BEECHAM PLC.
XX
PI   Valdes AM,  Groot PHE,  Spurr NK;
XX
DR   WPI; 2001-550086/61.
DR   N-PSDB; AAS12139.
XX
PT   Diagnosing atherosclerosis or susceptibility to atherosclerosis in a
PT   subject, by determining a single nucleotide polymorphism in specific
PT   codon of a polynucleotide encoding human CCR2 receptor in genome of the
PT   subject -
XX
PS   Claim 1; Page 20; 28pp; English.
XX
CC   The invention relates to diagnosing atherosclerosis (or susceptibility
CC   to) in a subject by determining expression or activity of the human
CC   CCR2-64I polypeptide (a polymorphic variant form of the human CCR2
CC   receptor) or the CCR2-64V polypeptide (human CCR2 receptor), by screening
CC   for a single nucleotide polymorphism in codon 64 of the polynucleotide
CC   encoding the CCR2 receptor. This results in production of CCR2-64I,
CC   whereby polymorphic variants are associated with a lower incidence of
CC   atherosclerosis. The presence or amount of CCR2-64I/V in a sample can
CC   also be analysed. The sequences of the invention can be used for
CC.  predicting the response of a patient to drug treatment, for predicting
CC   the disease outcome in a patient and also for the production of a
CC   treatment for hypercholesterolaemia. The sequence represents the
CC   polymorphic variant polypeptide CCR2-64I.
XX
SQ   Sequence   360 AA;

  Query Match             83.8%;  Score 1650.5;  DB 22;  Length 360;
  Best Local Similarity   95.2%;  Pred. No. 7.1e-180;
  Matches  318;  Conservative    4;  Mismatches    5;  Indels    7;  Gaps    3;

Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
           |||:||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVILILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy     301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
           |||||||||||||   |:|   ||    |:  |:
Db     301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334


RESULT 9
ABB56340
ID   ABB56340 standard; Protein; 360 AA.
XX
AC   ABB56340;
XX
DT   18-FEB-2002  (first entry)
XX
DE   Non-endogenous human GPCR protein, SEQ ID NO: 473.
XX
KW   Human; G protein-coupled receptor; GPCR; non-endogenous; mutant;
KW   constitutively activated GPCR; agonist; disease.
XX
OS   Homo sapiens.
OS   Synthetic.
XX
PN   WO200177172-A2.
XX
PD   18-OCT-2001.
XX
PF   05-APR-2001; 2001WO-US11098.
XX
PR   07-APR-2000; 2000US-195747P.
XX
PA   (AREN-) ARENA PHARM INC.
XX
PI   Lehmann-Bruinsma K,  Liaw CW,  Lin I;
```

XX
DR WPI; 2001-648759/74.
DR N-PSDB; ABI97976.
XX
PT Identifying agonists of G protein-coupled receptors (GPCRs) for use in
PT disease treatment, comprises contacting candidate compounds with
PT versions of GPCRs -
XX
PS Claim 1; Page 274-275; 394pp; English.
XX
CC The invention relates to G protein-coupled receptors (GPCRs) for which
CC the endogenous ligand has been identified. Non-endogenous
CC constitutively activated versions of known GPCRs are used in the
CC invention for the direct identification of candidate compounds as
CC receptor agonists, inverse agonists or partial agonists. Such
CC agonists are useful as therapeutic agents for diseases or disorders
CC associated with GPCRs. The present sequence is a non-endogenous
CC version of a known human GPCR.
XX
SQ Sequence 360 AA;

Query Match 83.5%; Score 1645.5; DB 22; Length 360;
Best Local Similarity 95.2%; Pred. No. 2.6e-179;
Matches 318; Conservative 3; Mismatches 6; Indels 7; Gaps 3;

```
Qy       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MLSTSRSRFIRNTNESGEEVTTFFDYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGN 60

Qy      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 MLVVLILINCKKLKCLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLY 120

Qy     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 HIGYFGGIFFIILLTIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTK 180

Qy     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 CQKEDSVYVCGPYFPRGWNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHR 240

Qy     241 AVRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 AKRVIFTIMIVYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCI 300

Qy     301 NPIIYAFVGEKFR---SLF---HIALG-CRIAPL 327
          |||||||||||||   |:|   ||    |:  |:
Db     301 NPIIYAFVGEKFRRYLSVFFRKHITKRFCKQCPV 334
```

RESULT 10
AAG79089
ID AAG79089 standard; Protein; 352 AA.
XX
AC AAG79089;
XX
DT 10-DEC-2001 (first entry)
XX
DE Amino acid sequence of human CCR5 protein.
XX
KW Human; receptor; DC-SIGN; dendritic cell; T lymphocyte; HIV;
KW gp120; C-type lectin; ICAM3; HIV entry; T cell; macrophage;
KW HIV infection; CCR5.
XX
OS Homo sapiens.
XX
PN WO200164752-A2.
XX
PD 07-SEP-2001.
XX
PF 28-FEB-2001; 2001WO-US06322.
XX
PR 02-MAR-2000; 2000US-0517605.
XX
PA (UYNY) UNIV NEW YORK STATE.
PA (UYNI-) UNIV NIJMEGEN.
XX
PI Littman DR, Kwon D, Van Kooyk Y, Geijtenbeek T;
XX
DR WPI; 2001-602565/68.
XX
PT An antibody for the treatment or prevention of HIV-infection comprises
PT a gp120 portion which binds to DC-SIGN or is exposed upon gp120 binding
PT of DC-SIGN due to concomitant conformational change -
XX
PS Disclosure; Page 118-119; 131pp; English.
XX
CC The specification describes an antibody which is specific for an
CC antigenic fragment of gp120. This antigenic fragment binds to DC-SIGN
CC or is exposed upon gp120 binding of DC-SIGN due to concomitant
CC conformational change. DC-SIGN is a receptor that is specifically
CC expressed on dendritic cells and facilitates infection of T lymphocytes
CC with HIV. DC-SIGN is identical to a HIV-1 gp120-binding C-type lectin.
CC DC-SIGN binds ICAM-3 (which is expressed constitutively on T lymphocytes)
CC with high affinity. The antibody of the invention inhibits the trans
CC enhancement of HIV entry into a T cell or macrophage facilitated by
CC dendritic cells. The antibody is useful to treat or prevent HIV
CC infection. The present sequence represents a human CCR5 protein,
CC which is a translocation promoting agent that interacts with CD4.
CC This receptor functions in HIV-1 entry into cells.
XX
SQ Sequence 352 AA;

Query Match 62.7%; Score 1236; DB 22; Length 352;
Best Local Similarity 77.4%; Pred. No. 1.8e-132;
Matches 236; Conservative 25; Mismatches 34; Indels 10; Gaps 2;

```
Qy      25 DYDYGAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLTDIYLLNL 84
           |||   || | :|||| |:||||||||||||||||||:|:|||||:|| :||||||||
Db      13 DYDTSEPCQKINVKQIAARLLPPLYSLVFIFGFVGNMLVILVLINCKRLKSMTDIYLLNL 72

Qy      85 AISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLAIVH 144
           ||||| ||:|:| ||| || :| ||| ||:| |||| ||:| ||||||||||||||||||
Db      73 AISDLFFLLTVPFWAHYAAAQWDFGNTMCQLLTGLYFIGFFSGIFFIILLTIDRYLAIVH 132

Qy     145 AVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFP----RGWNN 200
           ||||||||||||||||||:||||||:||||||: |||   | |  :||    : | |
Db     133 AVFALKARTVTFGVVTSVITWVVAVFASLPGIIFTRSQKEGLHYTCSSHFPYSQYQFWKN 192

Qy     201 FHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWTPYN 260
           | |:   |||||||||:|||||||||||||||||||||||||:|||||||||||| |||
Db     193 FQTLKIVILGLVLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLFWAPYN 252

Qy     261 IVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLF---- 316
           ||:||||||||||:|| |:::|||| |||||||||||||||||||||||:
Db     253 IVLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEKFRNYLLVFF 312

Qy     317 --HIA 319
             |||
Db     313 QKHIA 317
```

RESULT 11
AAW54037
ID AAW54037 standard; Protein; 354 AA.
XX
AC AAW54037;
XX
DT 06-AUG-1998 (first entry)
XX
DE Mouse CC-CKR5 protein.
XX
KW CC-CKR5; chemokine receptor; mouse; human; transgenic mouse;
KW HIV infection; T-cell mediated inflammation.
XX
OS Mus sp.

XX
PN EP834564-A2.
XX
PD 08-APR-1998.
XX
PF 03-OCT-1997; 97EP-0307823.
XX
PR 03-OCT-1996; 96US-0724984.
XX
PA (SMIK) SMITHKLINE BEECHAM CORP.
XX
PI Bergsma DJ, Brawner ME, Shabon U;
XX
DR WPI; 1998-195463/18.
DR N-PSDB; AAV23989.
XX
PT New isolated mouse chemokine receptor, CC-CKR5 - used to develop
PT products for the study, diagnosis and treatment of HIV infection or
PT T-cell mediated inflammation
XX
[redacted] Claim 11; Fig 1; 27pp; English.

CC This sequence is the mouse CC-CKR5 protein, is encoded by the DNA of the
CC invention. CC-CKR5 is a chemokine receptor. Cells transformed with the
CC DNA can be cultivated and the expression product harvested. The DNA can
CC be knocked out and replaced with the human CC-CKR5 gene, creating
CC transgenic mice which can be used in the study of HIV infection or T-cell
CC mediated inflammation. Transgenic mice could also be used to screen for
CC human CC-CKR5 agonists or antagonists.
XX
SQ Sequence 354 AA;

Query Match 62.6%; Score 1234; DB 19; Length 354;
Best Local Similarity 74.7%; Pred. No. 3.1e-132;
Matches 230; Conservative 29; Mismatches 43; Indels 6; Gaps 2;

```
Qy      17 GEEVTTFFDYDYG--APCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLK 74
           |   |  :| |||  ||| | :|||| |||||||||||||||| |||:| ||||:|||||
Db       5 GSVPTYIYDIDYGMSAPCQKINVKQIAAQLLPPLYSLVFIFGFAGNMMVFLILISCKKLK 64

Qy      75 CLTDIYLLNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILL 134
           :|||||||||||||:||| ||| ||||||||| |||:|||:|||||||||||||||||
Db      65 SVTDIYLLNLAISDLLFLLTLPFWAHYAANEWIFGNIMCKVFTGVYHIGYFGGIFFIILL 124

Qy     135 TIDRYLAIVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYF 194
           |||||||||||||||  || |||:|||:||:|||||||:| |||||: |||   | | |:|
Db     125 TIDRYLAIVHAVFALKVTTVNFGVITSVVTWVVAVFASLPEIIFTRSQKEGFHYTCSPHF 184

Qy     195 PRG----WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMI 250
           |      | :| |:   || |:||||:|:||||||| || |||||||||||||:|| |||
Db     185 PHTQYHFWKSFQTLKMVILSLILPLLVMIICYSGILHTLFRCRNEKKRHRAVRLIFAIMI 244

Qy     251 VYFLFWTPYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGE 310
           ||||||||||||:|| |||||||:|| |:::|||| | |||||||||||:|||:|||||||
Db     245 VYFLFWTPYNIVLLLTTFQEFFGLNNCSSSNRLDQAMQATETLGMTHCCLNPVIYAFVGE 304

Qy     311 KFRSLFHI 318
           ||||   :
Db     305 KFRSYLSV 312
```

RESULT 12
AAW27407
ID AAW27407 standard; Protein; 352 AA.
XX
AC AAW27407;
XX
DT 14-APR-1998 (first entry)
XX
DE Human CCR5.
XX
KW Human Cys-Cys chemokine receptor 5; CCR5;
KW human immunodeficiency virus; type 1; type 2; HIV-1; HIV-2;
KW diagnosis; treatment; prevention;
KW inflammatory disease; rheumatoid arthritis; glomerulonephritis;
KW asthma; idiopathic pulmonary fibrosis; psoriasis; viral infection;
KW cancer; atherosclerosis; autoimmune disorder.
XX
OS Homo sapiens.
XX
PN WO9732019-A2.
XX
PD 04-SEP-1997.
XX
PF 28-FEB-1997; 97WO-BE00023.
XX
PR 06-AUG-1996; 96EP-0870102.
PR 01-MAR-1996; 96EP-0870021.
XX
PA (EURO-) EUROSCREEN SA.
XX
PI Libert F, Parmentier M, Samson M, Vassart G;
XX
DR WPI; 1997-479829/44.
DR N-PSDB; AAT90117.
XX
PT Active and inactive forms of human CC chemokine receptor CCR-5 -
PT useful to diagnose, prevent and/or treat inflammatory disorders,
PT autoimmune disease and viral infection
XX
PS Claim 4; Fig 1b-c; 94pp; English.
XX
CC The present sequence is human CC (Cys-Cys) chemokine receptor
CC 5 (CCR5), which is stimulated by MIP-1 alpha, MIP-1 beta or RANTES
CC chemokines, but not by monocyte chemoattractant protein 1 (MCP-1),
CC MCP-2, MCP-3, interleukin-8 (IL-8) or growth related gene product
CC alpha (GRO alpha) chemokines. Active CCR-5 is also a receptor of
CC human immunodeficiency virus type 1 or type 2 (HIV-1 or HIV-2).
CC CCR5 or its cDNA can used to diagnose, treat and/or prevent
CC inflammatory diseases, e.g. rheumatoid arthritis,
CC glomerulonephritis, asthma, idiopathic pulmonary fibrosis and
CC psoriasis, viral infections, especially HIV-1 or HIV-2 infection,
CC cancer, atherosclerosis and autoimmune disorders.
XX
SQ Sequence 352 AA;

Query Match 62.1%; Score 1224; DB 18; Length 352;
Best Local Similarity 76.3%; Pred. No. 4.2e-131;
Matches 235; Conservative 27; Mismatches 34; Indels 12; Gaps 3;

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Qy      24 FDYDY--GAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLTDIYL 81
           :| :|    || | :|||| |:|||||||||||||||||:|||||||:|| :|||||
Db      10 YDINYYTSEPCQKINVKQIAARLLPPLYSLVFIFGFVGNMLVILILINCKRLKSMTDIYL 69

Qy      82 LNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLA 141
           |||||||| ||:|:| ||| || :| ||| ||:| |||| ||:| ||||||||||||||
Db      70 LNLAISDLFFLLTVPFWAHYAAAQWDFGNTMCQLLTGLYFIGFFSGIFFIILLTIDRYLA 129

Qy     142 IVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFP----RG 197
           :|||||||||||||||||||||:||||||:||||||: |||   | |  :|| . :
Db     130 VVHAVFALKARTVTFGVVTSVITWVVAVFASLPGIIFTRSQKEGLHYTCSSHFPYSQYQF 189

Qy     198 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 257
           | || |:   |||||||||:|||||||||||||||||||||||||:||||||||||
Db     190 WKNFQTLKIVILGLVLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLFWA 249

Qy     258 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLF- 316
           |||||:|||||||||||:|| |:::|||| ||||||||||||||||||||||||||:
Db     250 PYNIVLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEKFRNYLL 309

Qy     317 -----HIA 319
                |||
Db     310 VFFQKHIA 317
```

RESULT 13

```
AAW27123
ID   AAW27123 standard; Protein; 352 AA.
XX
AC   AAW27123;
XX
DT   14-DEC-1997  (first entry)
XX
DE   Human chemokine receptor 88C.
XX
KW   Chemokine receptor 88C; atherosclerosis; rheumatoid arthritis;
KW   tumour; asthma; viral infection; AIDS; inflammation;
KW   autoimmune disease; therapy; diagnosis; leukocyte trafficking;
KW   G protein coupled receptor; ligand; modulator; antibody; human.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1..32
FT                   /label= Extracellular_domain
FT   Domain          56..67
FT                   /label= Intracellular_domain
FT   Domain          89..112
FT                   /label= Extracellular_domain
FT   Domain          125..145
FT                   /label= Intracellular_domain
FT   Domain          166..191
FT                   /label= Extracellular_domain
FT   Domain          213..235
FT                   /label= Intracellular_domain
FT   Domain          259..280
FT                   /label= Extracellular_domain
FT   Domain          301..352
FT                   /label= Intracellular_domain
XX
PN   WO9722698-A2.
XX
PD   26-JUN-1997.
XX
PF   20-DEC-1996;   96WO-US20759.
XX
PR   07-JUN-1996;   96US-0661393.
PR   20-DEC-1995;   95US-0575967.
XX
PA   (ICOS-) ICOS CORP.
XX
PI   Gray PW,  Raport CJ,  Schweickart VL;
XX
DR   WPI; 1997-341689/31.
DR   N-PSDB; AAT85161.
XX
PT   New nucleic acid encoding chemokine receptors 88-2B and 88C - used
PT   to modulate leukocyte trafficking, e.g. for treatment of
PT   inflammation, tumours, viral infections, autoimmune diseases, etc.
XX
PS   Claim 16; Page 47-48; 65pp; English.
XX
CC   This polypeptide sequence comprises novel human chemokine receptor
CC   88C, a G protein coupled receptor that is involved in leukocyte
CC   trafficking.  Its amino sequence was deduced from a cDNA clone
CC   (AAT85161) isolated from a macrophage library.  It shows 62% identity
CC   to CCCKR1.  Chemokine receptor 88-2B (see AAW27124) has also been
CC   identified.  88C and 88-2B receptors and their polypeptide fragments
CC   can be produced in transformed host cells.  The receptors, peptides
CC   comprising one or more of the extracellular or intracellular
CC   domains, and anti-receptor antibodies can be used to modulate
CC   receptor activities, particularly ligand and G protein binding, and
CC   are potentially potentially useful in the treatment of
CC   atherosclerosis, rheumatoid arthritis, tumours, asthma, viral
CC   infection, AIDS, inflammatory conditions, pathological immune
CC   response, abnormal haematopoietic processes etc.
XX
SQ   Sequence   352 AA;
```

```
  Query Match           62.1%;  Score 1224;  DB 18;  Length 352;
  Best Local Similarity  76.3%;  Pred. No. 4.2e-131;
  Matches  235;  Conservative   27;  Mismatches   34;  Indels   12;  Gaps    3;

Qy      24 FDYDY--GAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLTDIYL 81
           :| :|    || | :|||| |:||||||||||||||||||:|||||||:|| :|||||
Db      10 YDINYYTSEPCQKINVKQIAARLLPPLYSLVFIFGFVGNMLVILILINCKRLKSMTDIYL 69

Qy      82 LNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLA 141
           |||||||| ||:|:| ||| || :| ||| ||:| |||| ||:| ||||||||||||||
Db      70 LNLAISDLFFLLTVPFWAHYAAAQWDFGNTMCQLLTGLYFIGFFSGIFFIILLTIDRYLA 129

Qy     142 IVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFP----RG 197
           :|||||||||||||||||||||:||||||:||||||: |||   | |  :||    :
Db     130 VVHAVFALKARTVTFGVVTSVITWVVAVFASLPGIIFTRSQKEGLHYTCSSHFPYSQYQF 189

Qy     198 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 257
           | || |:   |||||||||:|||||||||||||||||||||||||:||||||||||||
Db     190 WKNFQTLKIVILGLVLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLFWA 249

Qy     258 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLF- 316
           |||||:|||||||||||:|| |:::|||| ||||||||||||||||||||||||||:
Db     250 PYNIVLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEKFRNYLL 309

Qy     317 -----HIA 319
                |||
Db     310 VFFQKHIA 317
```

```
RESULT 14
AAW27125
ID   AAW27125 standard; Protein; 352 AA.
XX
AC   AAW27125;
XX
DT   14-DEC-1997  (first entry)
XX
DE   Macaque chemokine receptor 88C.
XX
KW   Chemokine receptor 88C; atherosclerosis; rheumatoid arthritis;
KW   tumour; asthma; viral infection; AIDS; inflammation;
KW   autoimmune disease; therapy; diagnosis; leukocyte trafficking;
KW   G protein coupled receptor; ligand; modulator; antibody.
XX
OS   Macaca sp.
XX
PN   WO9722698-A2.
XX
PD   26-JUN-1997.
XX
PF   20-DEC-1996;   96WO-US20759.
XX
PR   07-JUN-1996;   96US-0661393.
PR   20-DEC-1995;   95US-0575967.
XX
PA   (ICOS-) ICOS CORP.
XX
PI   Gray PW,  Raport CJ,  Schweickart VL;
XX
DR   WPI; 1997-341689/31.
DR   N-PSDB; AAT85163.
XX
PT   New nucleic acid encoding chemokine receptors 88-2B and 88C - used
PT   to modulate leukocyte trafficking, e.g. for treatment of
PT   inflammation, tumours, viral infections, autoimmune diseases, etc.
XX
PS   Claim 36; Page 57-58; 65pp; English.
XX
CC   This polypeptide sequence comprises macaque chemokine receptor 88C,
CC   a G protein coupled receptor that is involved in leukocyte
CC   trafficking.  Its amino sequence was deduced from a 88C DNA
CC   (AAT85163) isolated by PCR amplification.  It shows 97% identity to
CC   human 88C (AAW27123).  88C receptors and their polypeptide fragments
```

```
CC   can be produced in transformed host cells.  The receptors, peptides
CC   comprising one or more of the extracellular or intracellular
CC   domains, and anti-receptor antibodies can be used to modulate
CC   receptor activities, particularly ligand and G protein binding, and
CC   are potentially potentially useful in the treatment of
CC   atherosclerosis, rheumatoid arthritis, tumours, asthma, viral
CC   infection, AIDS, inflammatory conditions, pathological immune
CC   response, abnormal haematopoietic processes etc.  A hybridoma
CC   that produces an antibody that specifically binds to macaque 88C is
CC   claimed.
XX
SQ   Sequence   352 AA;

  Query Match             62.1%;  Score 1224;  DB 18;  Length 352;
  Best Local Similarity   76.6%;  Pred. No. 4.2e-131;
  Matches  236;  Conservative   26;  Mismatches   34;  Indels   12;  Gaps    3;

Qy      24 FDYDY--GAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLTDIYL 81
           :| ||    || | :|||| |:||||||||||||||||:||||||||:|| :|||||
Db      10 YDIDYYTSEPCQKINVKQIAARLLPPLYSLVFIFGFVGNILVVLILINCKRLKSMTDIYL 69

Qy      82 LNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLA 141
           |||||||||||:|:| ||| || :| ||| ||:| |||| ||:| ||||||||||||||
Db      70 LNLAISDLLFLLTVPFWAHYAAAQWDFGNTMCQLLTGLYFIGFFSGIFFIILLTIDRYLA 129

Qy     142 IVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFP----RG 197
           |||||||||||||||||||||||:||||||:||||||: |:|   | |  :||    :
Db     130 IVHAVFALKARTVTFGVVTSVITWVVAVFASLPGIIFTRSQREGLHYTCSSHFPYSQYQF 189

Qy     198 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 257
           | || |:   |||||||||:|||||||||||||||||||||||||:|||||||| |
Db     190 WKNFQTLKMVILGLVLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLLWA 249

Qy     258 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLF- 316
           |||||:||||||||||:|| |:::|||| |||||||||||||||||||||||||||||:
Db     250 PYNIVLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEKFRNYLL 309

Qy     317 -----HIA 319
                |||
Db     310 VFFQKHIA 317


RESULT 15
AAW23835
ID   AAW23835 standard; Protein; 352 AA.
XX
AC   AAW23835;
XX
DT   08-JUN-1998  (first entry)

DE   Human CC chemokine receptor 5 (CCR5).
XX
KW   CC chemokine receptor 5; CCR5; G-protein coupled receptor;
KW   human immunodeficiency virus; HIV; CD4; AIDS; therapy;
KW   transgenic animal.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          29..55
FT                   /label= I
FT                   /note= "transmembrane domain"
FT   Region          109..120
FT                   /note= "extracellular loop-1 (Claim 19)"
FT   Domain          104..126
FT                   /label= III
FT                   /note= "transmembrane domain"
FT   Domain          143..171
FT                   /label= IV
FT                   /note= "transmembrane domain"
FT   Region          187..210
FT                   /note= "extracellular loop-2 (Claim 19)"
FT   Domain          194..219
FT                   /label= V
FT                   /note= "transmembrane domain"
FT   Domain          238..258
FT                   /label= VI
FT                   /note= "transmembrane domain"
FT   Region          261..276
FT                   /note= "extracellular loop-3 (Claim 19)"
FT   Domain          277..300
FT                   /label= VII
FT                   /note= "transmembrane domain"
XX
PN   WO9745543-A2.
XX
PD   04-DEC-1997.
XX
PF   28-MAY-1997;   97WO-US09586.
XX
PR   28-MAY-1996;   96US-0018508.
XX
PA   (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI   Alkhatib G,  Berger EA,  Broder CC,  Combadiere C;
PI   Feng Y,  Kennedy PE, Murphy PM;
XX
DR   WPI; 1998-032650/03.
DR   N-PSDB; AAT76920.
XX
PT   CC chemokine receptor 5 polypeptide - used to inhibit membrane
PT   fusion between HIV and a target cell
XX
PS   Claim 68; Fig 1C; 70pp; English.
XX
CC   This protein sequence comprises of a novel human macrophage-selective
CC   CC chemokine receptor that has been designated CCR5.  The sequence
CC   was deduced from an isolated cDNA clone (see AAT76920).  An Ala127Leu
CC   variant (see W238340 of CCR5 was also identified.  The susceptibility
CC   of human macrophages to HIV infection depends on cell surface
CC   expression of CD4 and CCR5.  CCR5 is a member of the 7-transmembrane
CC   superfamily of G-protein coupled cell surface molecules.  It plays
CC   an essential role in the membrane fusion step of infection by some
CC   HIV isolates.  The establishment of stable, non-human cell lines
CC   and transgenic mammals having cells that coexpress human CD4 and
CC   CCR5 provides valuable tools for research of HIV infection.
CC   Antibodies that bind to CCR5, CCR5 variants, and CCR5-binding
CC   agents capable of blocking membrane fusion between HIV and target
CC   cells represent potential anti-HIV therapeutics for macrophage
CC   tropic strains of HIV.
XX
SQ   Sequence   352 AA;

  Query Match             62.1%;  Score 1224;  DB 19;  Length 352;
  Best Local Similarity   76.3%;  Pred. No. 4.2e-131;
  Matches  235;  Conservative   27;  Mismatches   34;  Indels   12;  Gaps    3;

Qy      24 FDYDY--GAPCHKFDVKQIGAQLLPPLYSLVFIFGFVGNMLVVLILINCKKLKCLTDIYL 81
           :| :|    || | :|||| |:||||||||||||||||:|||||||:|| :|||||
Db      10 YDINYYTSEPCQKINVKQIAARLLPPLYSLVFIFGFVGNMLVILILINCKRLKSMTDIYL 69

Qy      82 LNLAISDLLFLITLPLWAHSAANEWVFGNAMCKLFTGLYHIGYFGGIFFIILLTIDRYLA 141
           |||||||| ||:|:| ||| || :| ||| ||:| |||| ||:| ||||||||||||||
Db      70 LNLAISDLFFLLTVPFWAHYAAAQWDFGNTMCQLLTGLYFIGFFSGIFFIILLTIDRYLA 129

Qy     142 IVHAVFALKARTVTFGVVTSVITWLVAVFASVPGIIFTKCQKEDSVYVCGPYFP----RG 197
           :|||||||||||||||||||||:||||||:||||||: |||   | |  :||    :
Db     130 VVHAVFALKARTVTFGVVTSVITWVVAVFASLPGIIFTRSQKEGLHYTCSSHFPYSQYQF 189

Qy     198 WNNFHTIMRNILGLVLPLLIMVICYSGILKTLLRCRNEKKRHRAVRVIFTIMIVYFLFWT 257
           | || |:   |||||||||:|||||||||||||||||||||||||:|||||||| |
Db     190 WKNFQTLKIVILGLVLPLLVMVICYSGILKTLLRCRNEKKRHRAVRLIFTIMIVYFLFWA 249

Qy     258 PYNIVILLNTFQEFFGLSNCESTSQLDQATQVTETLGMTHCCINPIIYAFVGEKFRSLF- 316
           |||||:||||||||||:|| |:::|||| |||||||||||||||||||||||||||||:
Db     250 PYNIVLLLNTFQEFFGLNNCSSSNRLDQAMQVTETLGMTHCCINPIIYAFVGEKFRNYLL 309
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Qy     317 -----HIA 319
                 |||
Db     310 VFFQKHIA 317
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Job time : 58.0395 secs